3101 Terminal Support

The 3101 is supported by Com-plete either as a standard TTY device or in 3270-emulation mode. The mode is defined in Com-plete's terminal table. In emulation mode, the 3101 appears to the application program as a 3270. Com-plete translates the application program's 3270 data stream to 3101 format and then translate the 3101 data stream to 3270 format for the application program.

Note:
There are some device-dependent differences of which the application programmer should be aware. These differences are explained later in this documentation in the section **Programming Considerations**.

This chapter covers the following topics:

- Operation

- Programming Considerations

- System Programming Considerations

Operation

This section explains the use of the 3101 keyboard and the use of the 3101 setup switches. Since Com-plete begins the data stream with a LOCK ORDER and end it with an UNLOCK ORDER, a transmission error may result in a locked keyboard. This condition can be cleared by toggling the NORMAL/TEST key. It can also be cleared by use of the BREAK key. In 3270 emulation mode, however, the BREAK key will result in an emulated CLEAR key (end-of-job).

Keyboard Functions

SEND KEY	Is used as the equivalent to the 3270 ENTER key. In emulation mode, SEND performs the 3101 SEND-PAGE operation.
NEW LINE KEY	Moves the cursor to the next line, but does not TAB to the first field on that line as does the 3270 RETURN key.
CLEAR KEY	Causes the screen to be erased, but does not transfer data to the host. To emulate the 3270 CLEAR function, use the BREAK key or the CLEAR key; then type in *EOJ, and press the SEND key.
SEND MSG	Sends data up to the cursor location. This key can be used when the screen is not formatted.
SEND LINE	Sends one line of data. This key is most useful in TTY mode and should be avoided in emulation mode.
ERASE EOS KEY	Clears all unprotected data from the screen starting at the cursor location to the end of the screen.
ERASE EOF KEY	Clears all unprotected data from the cursor location to the end of the field. This key is the same as the 3270 ERASE EOF key.
ERASE INPUT KEY	Causes all unprotected data to be erased from the screen. This key is equivalent to the 3270 ERASE INPUT key.
TAB AND	These keys cause the cursor to move from one BACK-TAB KEYS adjacent field to another. They function the same way as the 3270 TAB keys. Unlike the 3270, the 3101 has static TAB locations in the first and last screen locations. In addition, the 3101 does not automatically skip to the next field when the current field fills with data; therefore, the TAB key must be used for each field.
PF KEYS	There are only eight PF keys on the 3101. They do not cause data to be transmitted to the host. Com-plete translates the 3101 PF keys as follows: a.PF1 through PF6 are translated as PF1 through PF6. b.PF7 and PF8 are translated as PA1 and PA2.

Setup Switches

Com-plete requires that some of the 3101 setup switches be set in a certain manner, while others are either optional or dependent on the hardware in use. The following table summarizes the setup switches. The switch name is preceded by (X,Y), where *X* is the group number of the switch and *Y* is the number of the switch within the group.

Switch	Description
(1,1) BLOCK/CHAR	Sets the 3101 transmission mode. Com-plete 3270 emulation requires the BLOCK (ON) setting.
(1,2) HDX/FD	Indicates half- or full-duplex. BLOCK assumes HDX (ON).
(1,3) MODEM TYPE	Setting is dependent on the modem type. The normal setting is (ON).

Switch	Description
(1,4) PRTS/CRTS	Controls the request to send status. This is normally set to (ON).
(1,5) REVERSE CH	Specifies whether or not a REVERSE CHANNEL ON/OFF is in use. It is normally set to (OFF).
(1,6/7) EOT/ETX/	Selects the line turnaround characters. CR/XOFF Com-plete requires that the setting be CR (ON,OFF).
(1,8) DUAL/MONO	Sets the character set mode. It is normally set to MONO (OFF).
(2,1) STOP1/STOP2	Sets the number of stop bits used in the line protocol. The number of bits is usually dependent on the line speed. This is normally set to STOP1 (ON).
(2,2/3) ODD/EVEN/	Controls the line protocol parity type. The MARK/SPACE Com-plete default is SPACE (OFF,OFF).
(2,4) SEND LINE	Is used to change the function of the SEND key from SEND-PAGE to SEND-LINE. Com-plete 3270 emulation requires that this key be set to SEND-PAGE (OFF).
(2,6) NULL SUPP	Controls the suppression of the transmission of the trailing NULL characters. Com-plete emulation requires NULL SUPP (ON).
(2,7/8) NO OF TIME	Controls the number of TIME-FILL characters FILL CHARS used for the print data stream. This should be set to (OFF,OFF).
(3,1) AUTO NL	When (ON), automatically moves the cursor to the ON/OFF first character position in the next line. This is assumed to be (ON) when in BLOCK mode.
(3,2) AUTO LF	Controls the positioning of the cursor when the CR ON/OFF character is received. Com-plete emulation requires the (ON) setting.
(3,3) CR/CR LF	Controls the characters generated by the NL key. It can generate CR, or CR and LF. This is not applicable in BLOCK mode, but is normally set to CR (ON).
(3,4) SCROLL ON/OFF	Controls the scrolling mode of the 3101. Com-plete emulation requires no scrolling, that is, SCROLL (OFF).
(3,7) REVERSE VIDEO	Controls the use of the reverse video display feature. This setting is optional.
(3,8) BLINK CURSOR	Makes the cursor blink. This setting is optional.
(4,1-4) LINE SPEED	Is set according to the speed of line in use. The following table contains the appropriate settings. (1=ON,0=OFF)

Switch	Description
	BPS **Switches**
	150 0001
	200 0010
	300 0011
	600 0100
	1200 0101
	1800 0110
	2400 0111
	4800 1000
(4,5-8)	Controls the transmission speed to the printer. See the above LINE SPEED table for the equivalent settings.

Example

The following table contains a setup switch example. (1=ON,0=OFF)

1	2	3	4
11010010	10000100	11100000	01010101
BLOCK MODE	STOP1	CR.LF	1200 BPS
HDX	SPACE	SCROLL OFF	1200 BPS
CL/422	SEND PAGE	VIDEO	
PRTS	SUPP NULLS	NON-BLANK	
REV. CH. OFF	0 TIME-FILL		
CR			
MONO			

Programming Considerations

The 3101 appears to the Com-plete application programmer like a 3270 model 2. The following differences between the 3101 and the 3270 should be kept in mind, however.

- The cursor location is not returned by the 3101 SEND operation; therefore, the cursor address returned in the emulated 3270 buffer is always the highest screen location.

- The 3101 does not have a numeric attribute; therefore, the terminal operator is not limited to entering numeric characters in fields defined as numeric in the 3270 output.

- There is no equivalent to the 3270 ERASE-TO-ADDRESS order. Com-plete emulation ignores this order, unless the address in the order is the end of the screen. In that case, it generates the 3101 EOS function.

- The 3101 does not allow a "wraparound" field. In other words, it does not allow an attribute byte in the last screen position to define a field that begins in the first screen position. If Com-plete emulation encounters a situation where data wraps the screen, it will copy the last attribute byte encountered into the first screen location, thereby destroying the first screen location byte.

- The 3101 does not have the equivalent of the 3270 PT order. Com-plete emulation replaces the PT with the 3101 HT, which does not perform the ERASE EOF function before skipping to the next field. Because of this limitation, the Com-plete full-screen editor UEDIT will blank-fill fields instead of performing the PT.

- The Com-plete GETCHR function returns a device type of 327E. The PF Keys on the 3101 do not transmit data. Therefore, programs dependent on this 3270 feature will not work on the 3101. See the section entitled **Keyboard Functions** earlier in this documentation for PF emulation.

- The only WCC functions emulated by Com-plete are the SOUND ALARM and RESET KEYBOARD functions.

System Programming Considerations

In order to emulate a 3270 with the 3101, you must define the 3101 as a TTY device and specify OPT=EM3270. Other TIB parameters are coded just as they would be for normal TTY devices.